Getting Ready for Reactor Removal

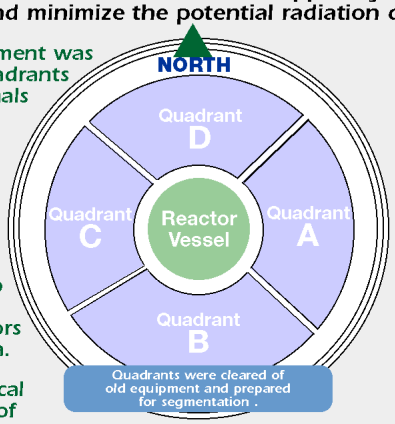
Equipment Set Up & Testing

Phase 0

As part of segmentation planning, NASA installed several support systems and made preparations to eliminate occupational hazards and minimize the potential radiation dose to workers.

Since April 2003, approximately 20,000 cubic feet of dry, solid, Class A low-level radioactive waste was shipped to Alaron.

- Loose and fixed equipment was removed from four quadrants (A-D) and adjacent canals then safely shipped to the Alaron waste processing facility in Pennsylvania.
- Cranes were load-tested for safety. Crane operators were certified and trained to operate remotely by watching video monitors showing the work area.
- The facility's old electrical system was taken out of service. Clearly identifiable electrical wiring and safety lighting were installed to protect against workers encountering "live wires" hidden in the floors, ceilings or walls.
- A Cask Transfer System, a trolley-like track and structural supports, was installed to transfer heavy waste liners out of the Reactor Facility to shipping casks on transport vehicles.
- A containment vessel ventilation system was installed to provide clean air to workers inside and filter the air before it is exhausted outside.
- Specific tools and all supplies were put in the exact place they would be needed once work began.
- Waste contracts were finalized and all necessary permits were obtained.
- Eight waste liners (cylindrical steel vessels) were delivered. Quality assurance checks were conducted on each one.




Cask Transfer System


Ventilation system being delivered for installation.

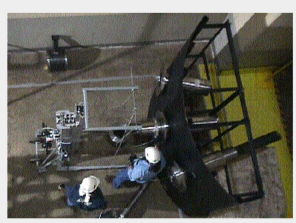

Waste liner Quality Assurance check.

Segmentation Tools & Training

As the segmentation plan was taking shape, workers tested the tools on actual mock-ups (built-to-size duplicate reactor components). Lessons learned from these exercises were used to improve the tools for efficiency and precision.

Segmentation tools were uniquely designed for this segmentation work to be:

- Effective on intended material (steel, aluminum, concrete)
- Engineered for precision (pushing, extracting, lifting, etc.)
- Able to be used in small spaces
- Equipped to minimize dust generation
- Efficient even when attached to long-handled poles


Workers rehearsed segmentation procedures at minus 25-feet to simulate conditions of working in the quadrants.

Mock-Up Reactor

NASA used the 100-kilowatt Mock-Up Reactor - a near duplicate to the main reactor but having a very low-level radioactive environment - for training exercises leading to segmentation.

- Enabled workers to become proficient with the tools in a "real" setting,
- Identified and corrected procedural problems before actual segmentation,
- Had the added benefit of dismantling more than 50% of the Mock-Up Reactor in the process. The remainder will be disassembled in a later phase.